

Chapter 7

UNAVOIDABLE ADVERSE IMPACTS

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This chapter presents the unavoidable adverse environmental impacts associated with the major programmatic actions that could result from decisions based on this document. As a result of such actions, the siting, construction, and/or operation of facilities located at Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee; Savannah River Site (SRS) in Aiken, South Carolina; Pantex Plant (Pantex) in Amarillo, Texas; Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico; Sandia National Laboratories in Albuquerque, New Mexico; Nevada Test Site (NTS) in Las Vegas, New Mexico; Tonopah Test Range (TTR) in Tonopah, Nevada; Lawrence Livermore National Laboratory (LLNL) in Livermore, California; and White Sands Missile Range (WSMR) in Las Cruces, New Mexico could result in adverse environmental impacts.

The analysis presented in this document has identified potential adverse impacts. In addition, mitigative measures that could be taken to either avoid or minimize these impacts have been identified. The residual adverse impacts of actions remaining after mitigation are considered to be unavoidable and the bounding case impacts of all potential alternatives are discussed below. The largest impacts for each of these facilities, except for LLNL, TTR, and WSMR, would come from the construction and operation of a Consolidated Nuclear Production Center (CNPC).

Construction of a CNPC at Y-12, the SRS, Pantex, NTS, or LANL would disturb approximately 600 acres. This land requirement represents two thirds of the 800 acres at Y-12. For SRS, this 600 acres site represents less than one percent of the total 198,420 acre site. For Pantex, 600 acres represents about 3.75 percent of the 15,977 acre site. For NTS, 600 acres is an insignificant portion of the 879,990 acre site. For LANL, 600 acres represents a little less than four percent of the 15,600 acre site. Although construction of a CNPC would change the existing land use, the proposed CNPC would be compatible and consistent with the land use plans of all of the potential sites and would be compatible with the current land use designations.

The proposed reference location at each of the candidate sites, except for LANL, is located in a highly developed and previously disturbed area; therefore, there would be no loss of habitat or impacts to biological, cultural or archaeological resources. At LANL, construction of a CNPC would take place at a site located within TA-16, some of which is developed. Wildlife and vegetation present at TA-16 are characteristic of species adapted to built environments with open settings, i.e., non-forested. Vegetation is comprised primarily of grasses, weeds, and plants used for landscaping. Wildlife is common to the region and is comprised primarily of small mammals, lizards, and birds. In addition to the impacts associated with the Consolidated Plutonium Center (CPC) and Consolidated Uranium Center (CUC), approximately 300 acres of low value vegetation and habitat would be affected during construction of the Assembly/Disassembly/High Explosive (A/D/HE) Center. These collectively make up the CNPC impacts. During site clearing activities, highly mobile wildlife species, such as other small mammals and birds, would be able to relocate to adjacent, less developed areas. However, successful relocation may not occur due to competition for resources to support the increased population and the carrying capacity limitations of areas outside the proposed development. For less mobile species (reptiles and other small mammals), direct mortality could occur during the actual construction event or ultimately

result from stress related to habitat alteration. Potential hunting habitat for raptors and other predators would be lost as acreage is used for development.

Construction impacts for all potential sites would be minor and the appropriate soil and erosion mitigation measures would minimize any adverse impacts. No Federal- and state-threatened and endangered species and other species of special interest are known to occur or may occur at any of the potential CNPC sites. However, TA-16, the candidate site at LANL, does contain core and buffer Areas of Environmental Interest for the Mexican spotted owl (*strix occidentalis lucida*), a federally listed threatened species, and other special interest avian species may use the habitat for foraging and hunting. The proposed CNPC at LANL would have minimal effect on the core and buffer area for the Mexican spotted owl as it is proposed for construction in a partially developed environment.

For each of the candidate sites, use of water is unavoidable. It is estimated that 145 million gallons per year of groundwater would be required to operate a CNPC at SRS, Y-12 NTS or LANL. This amount of water is not an issue for any of the candidate sites just noted. However, at Pantex 15,427,000 gallons of groundwater per year would be required for operation. This would amount to a 12 percent increase in groundwater usage for Pantex.

For NTS, there would be a significant impact to site electrical power requirements. Electrical energy requirements would exceed available site electrical energy capacity by approximately 42 percent. Available peak electrical load would be exceeded by approximately 33 percent. NTS would have to procure additional power. Currently, NTS does not use natural gas or coal which are necessary for the production of steam for heating. Coal would have to be transported to the site or a natural gas pipeline installed, to serve as fuel sources for the generation of steam. Impacts to liquid fuel and process gases would be negligible. Likewise at Pantex, there would be a significant impact to site electrical power requirements. Electrical energy requirements at Pantex would be approximately 53 percent of the site capacity. Available peak electrical load would be approximately 89 percent. It is expected that additional electrical capacity could be procured from the electric power provider to support the increased requirements. Impacts to fuel and process gases would be negligible for all candidate sites.

During construction there would be no in-migration at any CNPC candidate site. However, for operation of a CNPC there would be in-migration to all candidate sites to fill the 1,785 new jobs required to operate the CNPC. In most cases, vacancies in the existing housing stock would be sufficient. An increase in vehicle traffic associated with construction and operation would affect the roads and transportation network surrounding the alternative sites. The resulting impacts in traffic, congestion, and road accidents resulting from socioeconomic growth is unavoidable, but could be eased through upgrades to existing road systems.

During normal operations, a minimal amount of radioactive material and activation products would be released to the environment. However, any radiation dose received by a member of the public from emissions from the construction and operation of a CNPC would be too small to distinguish from naturally occurring background radiation. During normal operation, even with a strong as-low-as-reasonably-achievable (ALARA) program, workers would be exposed to an increased risk of cancer as a result of occupational exposure to radiation over an extended period.

Details about occupational exposure can be found in Chapter 5 in the Health and Safety Section for each candidate site.

In addition, because hazardous and toxic chemicals would be routinely handled at the various facilities, some worker exposure to these chemicals would be unavoidable. However, no onsite chemical concentrations would exceed the Occupational Exposure Limit guidelines. Analysis has shown that chemical pollutant emissions would be of minimal consequence and would not pose a danger to the public.

Operations at the facilities would generate a variety of wastes (including radioactive, hazardous, mixed, and sanitary) as an unavoidable result of normal operations. Although these sites use pollution prevention and waste avoidance measures, generation of chemical and radioactive wastes would be unavoidable. The sites would continue to further reduce hazards and potential exposures through the continued success of pollution prevention and waste avoidance measures. Details regarding waste generation, as well as other environmental impacts, are presented in Chapter 5.

If a site other than LANL is selected as the candidate site for a CNPC, plutonium operations at LANL's TA-55 would be phased out with a resulting job loss of 610 persons, and Category I/II special nuclear material (SNM) moved to the CNPC. This would reduce the radiation dose to workers by 220 person-roentgen equivalent in man (person-rem). It would also reduce waste generation at LANL by approximately 11 percent for low level waste (LLW), 14 percent for mixed LLW, and 80 percent for transuranic (TRU) waste.

If TTR were to be closed, there would be major socioeconomic impacts for the town of Tonopah, Nevada. A loss of 120 jobs would pose a problem for the local economy, the existing school system, and the local housing market. If flight test operations were to be transferred to WSMR, there would be an increase in employment, although not the 120 lost from TTR, as existing staff at WSMR would be utilized. Additional information is discussed in Chapter 5.